

TRADE AND COMMERCE  
CANADA

SD-EA. 395

## STANDARDS DIVISION

OTTAWA, March 16, 1959.

TYPE APPROVALSANGAMO TYPES "DEA" AND "DES" THERMAL DEMAND-ENERGY METERS

The apparatus specified and illustrated herein has been duly approved by the Standards Division under the provisions of the Electricity Inspection Act, Chap. 94, R.S. 1952, and may be admitted to verification in Canada.

Apparatus Approved: Types "DEA" and "DES" Single-Phase Combination Thermal Demand-Energy Meters, manufactured by the Sangamo Company Limited, Leaside, Toronto 17, Canada.

## Rating of Apparatus:

(a) 115 or 120 volts, 60-cycle -

Current Range (amps.)	..... 0.06-6.5	0.12-13	0.75-65	1.5-130
Disc Constant	..... 1/6	1/3	1-2/3	3-1/3
Demand Scale (watts)	..... 1500	1500	1500	1500
Kilowatts	..... .75	1.5	7.5	15
*Multiplier	..... .5	1	5	10
Register Ratio	..... 3000	3000	3000	3000
Test Period	..... 32 minutes	32 minutes	32 minutes	32 minutes

(b) 230 or 240 volts, 60-cycle -

Current Range (amps.)	..... 0.06-65	0.12-13	0.75-65	1.5-130
Disc Constant	..... 1/3	2/3	3-1/3	6-2/3
Demand Scale (watts)	..... 1500	1500	1500	1500
Kilowatts	..... 1.5	3	15	30
*Multiplier	..... 1	2	10	20
Register Ratio	..... 3000	3000	3000	3000
Test Period	..... 32 minutes	32 minutes	32 minutes	32 minutes

\* Multipliers apply to both watthour and demand readings.

Description: The watthour portion of the meter is a slightly modified version of the present type "ED". The general type designation is "DE"; the suffixes 'A' and 'S' refer respectively to standard single-phase 'A' base and socket-type base. The new types are more compact than the "EDA" and "EDS", due to the position of the damping magnets at the sides rather than the front and a reduction in the size of the demand potential transformer now moulded in epoxy resin. The register has been increased in size, with larger circles, and the insulation level of the potential circuit has been raised by the use of epoxy moulding. The maximum demand pointer has had all offsets removed for greater stiffness, and four joints in the current circuits have been eliminated by running the current leads directly to the terminals. The driven demand pointer is of the

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grease-damped type. The demand zero, full scale and wattour full load adjustments are accessible from the front of the meter and the light load adjustment is on the left-hand side. Two damping magnets are used, one at each side of the meter below the disc. These magnets are cylindrical with a slot at one end to form a general U-shape. A mild steel disc above each magnet on the opposite side of the disc completes the magnetic circuit. Full load adjustment is obtained by rotating one or both magnets about its vertical axis. The full load adjustment acts on the right-hand magnet by an arm and pin that fits into a slot in the magnet. The arm serves two functions - as a locking device, and as a temperature sensitive magnetic shunt for class I temperature compensation. This type is approved for use with a clock or cyclometer register. It is approved with the pivot type lower bearing only.

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SANGAMO TYPE "DES" THERMAL DEMAND-ENERGY METER



